

CLAIMS

1. A method for forming an embedded cell block, comprising:
providing a flow-through cell block embedding apparatus, comprising:
a cell flow pathway defined by an inflow tube for delivering cell fragments from a cell sample to a sample port, the sample port being in fluid communication with a tissue cassette having attached thereto a filter, the cell flow pathway being configured so that, upon the application of pressure, the cell fragments are drawn from the cell sample through the inflow tube to the sample port and deposited onto the filter; and
a reagent flow pathway defined by a plurality of reagent delivery tubes for delivering the reagents to a reagent port in communication with the sample port, the reagent flow pathway being configured so that, upon the application of pressure, the reagents are drawn through the reagent delivery tubes to the reagent port and to the deposited cell fragments on the filter;
depositing a sample of cell fragments onto the filter;
flowing a first reagent through the filter to remove water and fatty substances from the sample;
flowing a second reagent through the filter to remove the first reagent; and
flowing an embedding solution through the filter to form an embedded cell block.
2. The method of claim 1, wherein the first reagent is alcohol.
3. The method of claim 1, wherein the second reagent is selected from the group consisting of xylene and diphenyl ether.
4. The method of claim 3, wherein the second reagent has a triple point near room temperature and one atmosphere pressure.
5. The method of claim 3, wherein the second reagent is allowed to evaporate prior to the addition of embedding solution.

6. The method of claim 1, wherein the embedding solution is melted paraffin.
7. The method of claim 1, further including the step of staining the sample prior to adding the embedding solution.
8. The method of claim 7, wherein the step of staining includes flowing a staining solution through the filter.
9. The method of claim 8, wherein the staining solution is selected from the group consisting of hematoxylin and eosin.
10. The method of claim 1, further including the step of flowing a preservative through the filter prior to adding the embedding solution.
11. The method of claim 10, wherein the preservative is formalin.
12. The method of claim 1, further including the step of decalcifying the sample prior to adding the embedding solution.
13. The method of claim 12, wherein the step of decalcifying includes flowing a decalcifying acid through the filter.
14. The method of claim 1, wherein the sample is deposited manually.
15. The method of claim 1, wherein the sample is deposited by the application of a negative pressure.
16. The method of claim 1, wherein the sample is deposited by the application of a positive pressure.

17. The method of claim 1, wherein a negative pressure is applied to effect flow of the reagents and embedding solution.
18. The method of claim 1, wherein a positive pressure is applied to effect flow of the reagents and embedding solution.
19. A method for forming a cell block for microtome sectioning, comprising:
 - providing a filter for holding a sample of cell fragments, the filter allowing the passage of at least one fluid embedding reagent therethrough, and wherein the filter is configured to draw the sample of cell fragments onto and the at least one fluid embedding reagent through the filter upon the application of an external pressure;
 - depositing the sample of cell fragments onto the filter;
 - drawing a first reagent through the filter to remove water and fatty substances from the sample;
 - drawing a second reagent through the filter to remove the first reagent; and
 - drawing an embedding solution through the filter to form a cell block.
20. The method of claim 19, wherein the filter is connected to a cell flow pathway having an inflow tube for delivering cell fragments from a cell sample to the filter.
21. The method of claim 19, wherein the filter is connected to a reagent flow pathway having a plurality of reagent delivery tubes for delivering the reagents to the filter.
22. The method of claim 19, further including the step of allowing the second reagent to evaporate prior to the addition of the embedding solution.
23. The method of claim 19, further including the step of removing the filter from the embedding solution after the solution has hardened.
24. The method of claim 19, wherein the external pressure is a negative pressure.

25. The method of claim 19, wherein the external pressure is a positive pressure.